NASA Milestones
Calendar Years 2016 – 2021

As of December 2016. For updated and additional information, visit *www.nasa.gov*

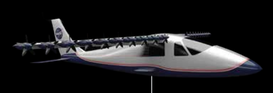
National Aeronautics and Space Administration

2016 J F M A M J J A S O N D | 2017 J F M A M J J A S O N D | 2018 J F M A M J J A S O N D | 2019 J F M A M J J A S O N D | 2020 J F M A M J J A S O N D | 2021 J F M A M J J A S O N D

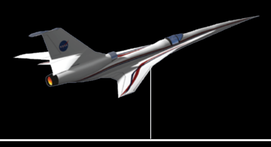
Aeronautics

UTM Drone Tech Demo 2, Multi-site

UTM Drone Tech Demo 3



All-Electric X-57 First Flight

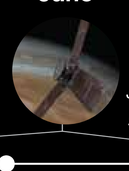


Low-Boom Sonic Demonstrator First Flight

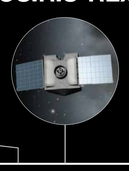
ATD Automation Tools to FAA

Science Mission Launches

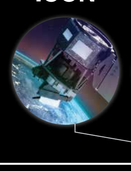
Juno — Jupiter Arrival



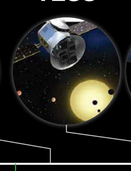
OSIRIS-REx



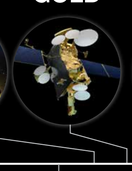
ICON



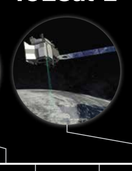
TESS



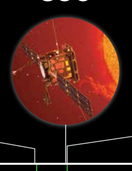
GOLD



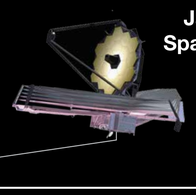
ICESat-2



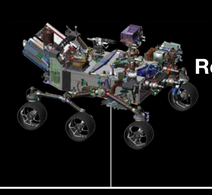
SOC



James Webb Space Telescope Launch

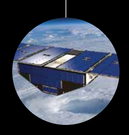


Mars 2020 Rover Launch

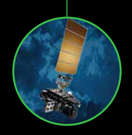


Reimbursable Missions

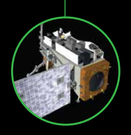
CYGNSS



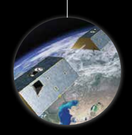
GOES-R



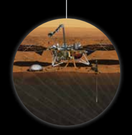
JPSS-1



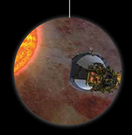
GRACE-FO



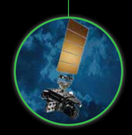
InSight



SPP



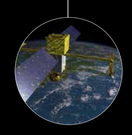
GOES-S



MetOp-C

Landsat 9

SWOT



Lucy

CubeSat Launch Initiative (CSLI) Ongoing through 2021 and Beyond

Science Instrument Deliveries to ISS Through 2021*

- Cold Atom Lab (CAL)
- Cosmic Ray Energetics and Mass (CREAM)
- ECOsystem Spaceborne Thermal Radiometer Experiment on Space Station (ECOTRESS)
- Educational Launch of Nanosatellites (ELaNa)
- GeneLab Phase 2 and 3
- Global Ecosystem Dynamics Investigation (GEDI)
- Life Sciences Glovebox
- Multiple User System for Earth Sensing Facility (MUSES)
- Neutron Star Interior Composition Explorer (NICER)
- Orbiting Carbon Observatory (OCO-3)
- Stratospheric Aerosol and Gas Experiment (SAGE-III)
- Total and Spectral Solar Irradiance Sensor (TSIS-1)

Capability Upgrades and Technology Demonstrations Aboard ISS*

- Bigelow Expandable Activity Module (BEAM)
- Exploration ECLSS Systems
- Exploration Exercise Devices
- Exploration Medical Devices
- International Docking Adapter (IDA)
- Refabricator
- Roll-Out Solar Array (ROSA)
- Spacecraft Fire Experiment (SAFFIRE)
- Station Explorer for X-ray Timing and Navigation Technology (SEXTANT)
- Universal Waste Management System (UWMS)
- Zero Boil Off Tank (ZBOT)

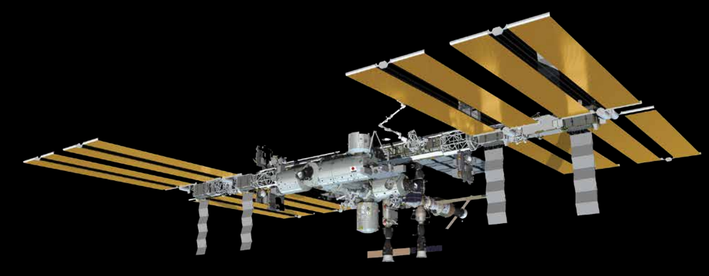
* programs listed here include items funded by AES, SLPSRA, HRP, STMD, and SMD

Commercial Cargo Resupply Missions to ISS Ongoing Through at Least 2024

International Space Station (ISS)

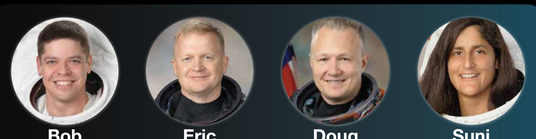
NASA Astronauts

Expedition 47	Expedition 48/49	Expedition 49/50	Expedition 50/51	Expedition 51/52	Expedition 52/53	Expedition 53	Expedition 54
Tim Kopra, Jeff Williams	Kate Rubins	Shane Kimbrough	Peggy Whitson	Mark Vande Hei	Jack Fischer		



Expeditions continue through at least 2024

Commercial Crew Program (CCP)



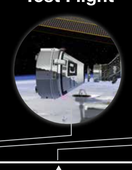
Bob Behnken, Eric Boe, Doug Hurley, Suni Williams

Initial Commercial Crew Astronauts

Astronaut Class Selection June 2017

SpaceX Flight Test with Crew (Demo2)

Boeing Crewed Test Flight



SpaceX PCM-1 Flight

Boeing PCM-1 Flight

Commercial Crew launches continue through at least 2024

Collaborations for Commercial Space Capabilities

Through 2021 and Beyond

SpaceX launch of Red Dragon mission to Mars

SpaceX Red Dragon Entry to Mars surface

Advanced Exploration Systems (AES) for Habitation and Propulsion

Through 2021 and Beyond

NextSTEP-2 Selection

NextSTEP-2 Ground-Based Cislunar Habitat Prototype Testing

Mars-class In-Space Propulsion Approach Selection

Other missions with AES funding

Orion, Space Launch System (SLS), and Exploration Ground Systems (EGS)

Orion Crew Module Pressure Vessel on Dock at KSC

Orion Crew Module Initial Power On

EGS Pad B Ready for Verification/ Validation Testing

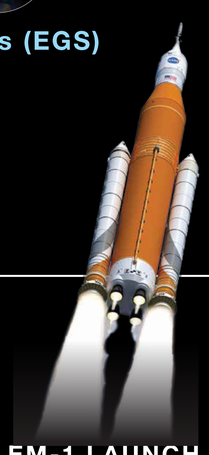
Orion Crew/Service Module Delivery to Ground Systems Development and Operations (GSDO)

SLS SLS Qual Motor-2 (QM-2) Booster Qualification Test

EGS Vehicle Assembly Building (VAB) Ready for Verification/ Validation Testing

SLS SLS Interim Cryo Propulsion Stage Complete

SLS SLS Core Stage Delivered to Stennis Space Center (SSC) for Green Run Testing

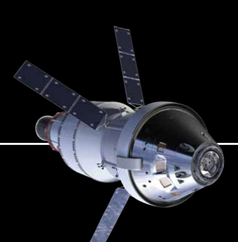


EM-1 LAUNCH

EM-1 Secondaries

Lunar Flashlight, Near Earth Asteroid Scout, Bio Sentinel, LunaH-MAP, CuSPP, Lunar IceCube, Skyfire, JAXA SLSLIM, ESA ArgoMoon, JAXA EQUULEUS, STMD Centennial Challenge Winners.

ORION Ascent Abort 2 (AA-2) Test



EM-2 Launch

Asteroid Redirect Robotic Mission (ARRM)

Preliminary Design Review

Solar Electric Propulsion (SEP) System Delivery

Launch

Space Communications and Navigation (SCaN)

Launch Communications Stations (LCS) at Ponce de Leon (PDL) and Kennedy Uplink Station (KUS)

Tracking And Data Relay Satellite (TDRS)-M Launch

Antenna: AS2 Alaska Satellite Facility, AK, USA

Ka-band Augmentation: AS3 Alaska Satellite Facility, AK, USA

DSS-56 Madrid, Spain

DSS-53 Madrid, Spain

Integrated LCRD LEO (Low-Earth Orbit) User Modem And Amplifier (ILLUMA)-T Flight Demo on ISS

NEN Antenna Punta Arenas, CH

DSS-36 Canberra, Australia

Deep Space Atomic Clock (DSAC) Launch

Laser Communication Relay Demonstration (LCRD)

Mars 2020 MOXIE, MEDLI-2, Terrain Relative Navigation (TRN)

Deep Space Optical Communication (DSOC)

Space Technology Missions

GPIM

ISS Station Explorer for X-ray Timing and Navigation Technology (SEXTANT)

Solar Electric Propulsion (SEP) System Delivery

Restore-L

2016 J F M A M J J A S O N D | 2017 J F M A M J J A S O N D | 2018 J F M A M J J A S O N D | 2019 J F M A M J J A S O N D | 2020 J F M A M J J A S O N D | 2021 J F M A M J J A S O N D